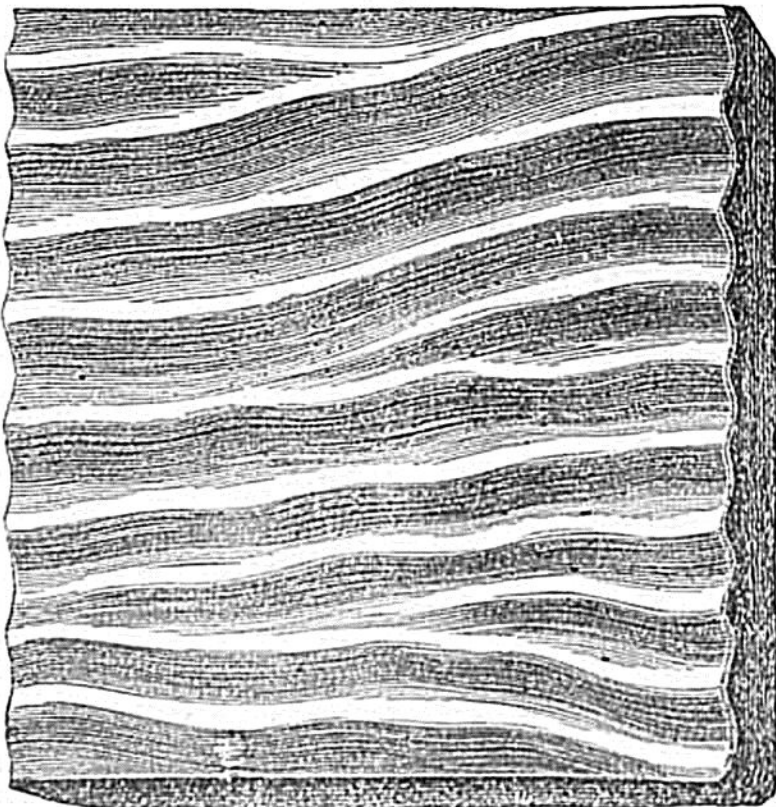


cumulation of all coarse materials conveyed into deep water, especially where they are composed in great part of pebbles, which cannot be transported to indefinite distances by currents of moderate velocity. By inattention to facts and inferences of this kind, a very exaggerated estimate has sometimes been made of the supposed depth of the ancient ocean. There can be no doubt, for example, that the strata *a*, fig. 7, or those nearest to Monte Calvo, are older than those indicated by *b*, and these again were formed before *c*; but the vertical depth of gravel and sand in any one place cannot be proved to amount even to 1000 feet, although it may perhaps be much greater, yet probably never exceeding at any point 3000 or 4000 feet. But were we to assume that all the strata were once horizontal, and that their present dip or inclination was due to subsequent movements, we should then be forced to conclude, that a sea 9 miles deep had been filled up with alternate layers of mud and pebbles thrown down one upon another.

In the locality now under consideration, situated a few miles to the west of Nice, there are many geological data, the details of which cannot be given in this place, all leading to the opinion, that when the deposit of the Magnan was formed, the shape and outline of the alpine declivities and the shore greatly resembled what we now behold at many points in the neighborhood. That the beds, *a*, *b*, *c*, *d*, are of comparatively modern date is proved by this fact, that in seams of loamy marl intervening between the pebbly beds are fossil shells, half of which belong to species now living in the Mediterranean.

*Ripple mark.*—The ripple mark, so common on the surface of sandstones of all ages (see fig. 8), and which is so often seen on the sea-shore

Fig. 8.



Slab of ripple-marked (new red) sandstone from Cheshire.